

ASSIGNMENT 4

Textbook Assignment: "Fiber Line" and "Wire Rope," pages 4-1 through 5-15.

<p>Learning Objective: Identify types, fabrication of, size designations, and proper handling and care of fiber line.</p>		4-7.	You may have to order line by diameter, rather than circumference, and refer to it as rope.
			<ol style="list-style-type: none"> 1. True 2. False
4-1.	What is the primary reason manila line is preferred for use as standard issue line?	4-8.	Soap is not used to clean fiber line because
	<ol style="list-style-type: none"> 1. Its resistance to wear 2. It is waterproof 3. Its quality and relative strength 4. It is easy to handle 		<ol style="list-style-type: none"> 1. it shrinks the line 2. it creates abrasion 3. it causes deterioration of fibers 4. it takes the oil out of the line
4-2.	The primary reason for the use of nylon line is that it	4-9.	When nylon line becomes slippery with grease or oil, it should be cleaned with what solvent(s)?
	<ol style="list-style-type: none"> 1. is waterproof 2. is resistant to abrasion 3. resumes normal length after being stretched 4. has a breaking strength that is nearly 3 times greater than that of manila line 		<ol style="list-style-type: none"> 1. Acetone only 2. Either kerosene or diesel fuel 3. Alcohol or gasoline 4. Gasoline only
4-3.	Fiber line is fabricated in three twisting operations.	4-10.	Which of the following fabrics should you use to apply whippings to a line?
	<ol style="list-style-type: none"> 1. True 2. False 		<ol style="list-style-type: none"> 1. Rope yarn 2. Marline 3. Houseline 4. Twine
4-4.	Which, if any, of the following types of line is formed from three twisting operations in a right-hand direction?	4-11.	When nylon line is properly handled and maintained, it should last five times longer than manila line subjected to the same use.
	<ol style="list-style-type: none"> 1. Hawser laid 2. Shroud laid 3. Cable laid 4. None of the above 		<ol style="list-style-type: none"> 1. True 2. False
4-5.	The circumference of a 1 1/4-inch manila line is equal to about how many millimeters?	4-12.	Which of the following agents can cause damage to a line that is hard to detect by visual examination?
	<ol style="list-style-type: none"> 1. 29 2. 32 3. 38 4. 44 		<ol style="list-style-type: none"> 1. Storage room containing chemicals 2. Lime 3. Direct sunlight 4. Each of the above
4-6.	What is the maximum size of fiber line normally carried in stock?	4-13.	When stowing wet line, you should always select a heated well-ventilated space to promote rapid drying.
	<ol style="list-style-type: none"> 1. 12 inches 2. 14 inches 3. 16 inches 4. 18 inches 		<ol style="list-style-type: none"> 1. True 2. False

- 4-14. A line that is kinked from excessive turns should be given a thorough footing by
1. coiling the line down clockwise and then pulling the bottom end of the coil up and out of the middle of the coil
 2. coiling the line down counterclockwise and then pulling the bottom end of the coil up and out of the middle of the coil
 3. taking an end at the inside bottom of the coil and after pulling it free, coiling the line down clockwise
 4. taking an end at the inside bottom of the coil and after pulling it free, coiling the line down counterclockwise
- 4-15. Which of the following methods of inspecting fiber line for safety is approved?
1. Visual inspection
 2. Smell test
 3. Fiber break test
 4. Each of the above
- 4-16. The breaking strength of a line is considerably higher than its safe working load to account for what factor?
1. The different applications of pressure due to load sizes
 2. The strain imposed by bending over sheaves in a block
 3. Excessive vibration
 - 4* Exposure to moisture
- 4-17. You are going to use a new 2-inch manila line to hoist a load, and you do not have tables to use to determine the safe working load (SWL) of the line. This situation requires you to use the "rule of thumb" formula to calculate the SWL for the 2-inch line. By doing so, you determine the SWL for the line is
1. 400 pounds
 2. 600 pounds
 3. 800 pounds
 4. 900 pounds
- 4-18. What is the breaking strength of a 2 1/2-inch fiber line?
1. 4,625 pounds
 2. 4,825 pounds
 3. 5,225 pounds
 4. 5,625 pounds
- 4-19. The safety factor of a line is the ratio between the breaking strength and the safe working load.
1. True
 2. False
- 4-20. Nylon has a breaking strength approximately three times greater than that of manila line. What is the breaking strength of a 2-inch nylon line?
1. 7,600 pounds
 2. 8,600 pounds
 3. 9,600 pounds
 4. 10,600 pounds
- 4-21. Nylon line can be stretched what percentage of its length before it will part?
1. 20%
 2. 30%
 3. 40%
 4. 50%
- 4-22. Although nylon line is superior in many ways to manila line, what characteristic can cause it to be hazardous?
1. It is very smooth and slips through the hands easily
 2. It may part when stretched more than 30%
 3. The snapback is severe when a heavy strain is released
 4. Freezing produces a slight loss of stretch
-
- Learning Objective: Recognize the fundamentals of making knots, bends, and hitches.
-
- 4-23. The free or working end of a line is known as the
1. bight
 2. running end
 3. tag end
 4. open end
- 4-24. What type of knot is best used to tie two lines of the same size together so they will not slip?
1. Reef
 2. Figure eight
 3. Overhand
 4. Sheepshank

4-25. Which of the following types of knots is used to take a load off a weak section out of line and can also be used to shorten a line?

1. Reef
2. Figure eight
3. Overhand
4. Sheepshank

4-26. When tying lines together that are unequal in size, you should use what type of knot?

1. Becket bend
2. Bowline
3. Running bowline
4. Half hitch

4-27. A free-running lasso that will not tighten up on the standing part of the line is provided by what knot?

1. Bowline
2. Running bowline
3. Spanish bowline
4. French bowline

4-28. When tying up timber or anything that is round or nearly round, you should use what type of hitch?

1. Barrel
2. Clove
3. Half
4. Scaffold

Learning Objective: Recognize the fundamentals of splicing fiber line.

4-29. A properly made short splice will retain up to 50% of the strength of the line, while a properly tied knot will retain 100% of its strength.

1. True
2. False

4-30. What type of tape is used for whipping the strands and lines in nylon line instead of seizing stuff as in manila line?

1. Duct
2. Aluminum
3. Friction
4. Strapping

4-31. Because nylon line is smooth and elastic, at least how many extra tucks are required when splicing it?

1. One
2. Two
3. Three
4. Four

4-32. What type of splice should be used to run freely through a block?

1. Back
2. Long
3. Short
4. Eye

4-33. When there is not much overlap for splicing, you should use what type of splice?

1. Back
2. Long
3. Short
4. Eye

4-34. A back splice should be used to prevent a line from unlaying or unraveling at the end of a line.

1. True
2. False

Learning Objective: Recognize how wire rope is fabricated and identify the different grades, lays, and types of wire rope.

4-35. What type of rope should you select for a job that requires wire rope of great flexibility while maintaining adequate strength?

1. 6 by 7 fiber core
2. 6 by 19 wire strand core
3. 6 by 24 wire rope core
4. 6 by 37 fiber core

4-36. What type of wire rope should you select for use on a permanent hoist in which the rope runs through several sheaves and onto a small-diameter drum?

1. Hot-dipped galvanized wire rope with a fiber core
2. Electroplated wire rope with an independent wire rope core
3. Plain wire rope with a fiber core
4. Hot-dipped galvanized wire rope with a wire strand core

- 4-37. Wire rope that withstands crushing the best has which of the following properties?
1. Wires that are uncoated
 2. Is made of improved plow steel
 3. An independent core
 4. A galvanized wire core
- 4-38. How does preformed wire rope compare to nonpreformed wire rope?
1. It is harder to splice
 2. It is more flexible
 3. It is likely to fly apart when cut or broken
 4. It is less flexible
- 4-39. The three grades of plow steels used in manufacturing wire rope can have a variation in tensile strength of
1. 10,000 psi
 2. 20,000 psi
 3. 30,000 psi
 4. 40,000 psi
- 4-40. When looking at a wire rope, you observe that the wires in the strands are laid to the right and the strands are laid to the left. This wire rope has what type of lay?
1. Regular right lay
 2. Lang right lay
 3. Lang left lay
 4. Left regular lay
- 4-41. What type of wire rope is most often used by the Construction Battalions (Seabees) of the Naval Construction Force?
1. 8 strand, consisting of 6, 7, 12, 19, 24, or 37 wires in each strand
 2. 6 strand, consisting of 4, 8, 16, 24, or 36 wires in each strand
 3. 6 strand, consisting of 6, 7, 12, 19, 24, or 37 wires in each strand
 4. 8 strand, consisting of 4, 8, 16, 24, or 36 wires in each strand
- 4-42. The ability of a wire rope to withstand the compressive and squeezing forces that can distort its cross section when running over sheaves, rollers, and drums is known by what term?
1. Abrasion resistance
 2. Fatigue resistance
 3. Crushing strength
 4. Tensile strength
- 4-43. The outer wires of each strand of wire rope contribute to the fatigue resistance or abrasion resistance of the wire. This factor makes which of the following service applications correct?
1. Use large wires when high abrasion resistance only is required
 2. Use small wires when high abrasion resistance only is required
 3. Use large wires when high fatigue resistance only is required
 4. Use small wires when both high fatigue and abrasion resistance are required
- 4-44. The correct way to measure wire is to measure from the top of one strand to the top of the strand directly opposite it.
1. True
 2. False
- 4-45. Compute the safe working (SWL) of a 2-inch wire rope.
1. 6,000 pounds
 2. 7,000 pounds
 3. 8,000 pounds
 4. 9,000 pounds
- 4-46. Which of the following actions does NOT help to prevent wire rope failure?
1. Checking for overriding or crosswinding of drums
 2. Lubricating with heavy-duty grease
 3. Inspecting fitting attachments
 4. Ensuring correct size, construction, and grade are utilized

Learning Objective: Identify various factors to consider in selecting a method of measuring wire rope and for computing safe working loads.

Learning Objective: Recognize the fundamentals of wire rope handling.

4-47. In what manner should right and left lay wire rope be coiled down?

1. Both clockwise
2. Both counterclockwise
3. Left lay, clockwise; right lay, counterclockwise
4. Right lay, clockwise; left lay, counterclockwise

4-48. When wire rope or fiber line is received from the manufacturer on a reel, it should be unwound instead of pulled off in bights in order to keep the rope or line from

1. chafing
2. kinking
3. breaking
4. unraveling

4-49. When a loop forms in wire rope and it is pulled into a kink, you should take what action?

1. Uncross the ends and push them apart
2. Cut out the kinked portion
3. Pull it out by stretching one end of the rope
4. Pound it out with a wooden mallet

4-50. In those cases where reverse bends cannot be avoided, you should take what action to help decrease wear and fatigue in wires and strands?

1. Use smaller diameter rope than is ordinarily used
2. Lubricate the rope at more frequent intervals than usual
3. Reduce the space between the blocks and drums being used
4. Use larger blocks and drums than are ordinarily used and space them as far apart as possible

4-51. Sheave diameter should not be less than 20 times the diameter of the wire rope, EXCEPT in the case where wire rope has which of the following properties?

1. An independent core
2. Electroplated wire strands
3. 6 by 37 with a fiber core
4. 6 by 24 with a steel core

4-52. Before cutting wire rope, you should apply a total of how many seizings to each side of the area being cut?

1. One
2. Two
3. Three
4. Four

4-53. When putting on the turns of seizing wire, you use a serving bar or iron to increase the tension on the seizing wire when what conditions exist?

1. The seizing is only temporary, or the diameter of the wire rope is 1/2 inch
2. The seizing is only temporary, or the diameter of the wire rope is 1 inch
3. The seizing is to be permanent, or the diameter of the wire rope is 1 1/2 inches or more
4. The seizing is permanent, or the diameter of the wire rope is 1 5/8 inches or more

4-54. Seizing is placed at intervals from each other that equal what distance?

1. The diameter of the wire rope
2. Twice the diameter of the wire rope
3. Three times the diameter of the wire rope
4. Four times the diameter of the wire rope

4-55. What advantage is gained by cutting back or reversing ends of wire rope connections?

1. The exposure of worn parts
2. The prevention of corrosion on exposed ends
3. An increase in the service life of the rope
4. A change in the tension direction of the rope core

4-56. While inspecting a wire rope, you come across individual wires that are broken and bent back (fishhooks). What situation caused this condition to develop?

1. Damaged drum
2. Incorrect sheave size
3. Reverse and sharp bends
4. Improper fleet angle

4-57. Overloading a rope will decrease its diameter. A rope should be removed from service when its diameter is reduced to what percentage of its original size?

1. 50%
2. 75%
3. 80%
4. 85%

4-58. Of all the protective actions you should take when storing wire rope, which one is of prime importance?

1. Wrap securely in waterproof material
2. Rotate to prevent damage to bottom coils
3. Always place out of direct sunlight
4. Clean and lubricate well

4-59. Fishhooks, kinks, abrasion, and corrosion in wire rope are causes to remove it from service. Wire rope is unsafe when what percentage of the total number of wires within the length of one lay of the rope is broken?

1. 8%
2. 6%
3. 5%
4. 4%

Learning Objective: Identify the techniques used for special attachments for wire rope.

4-62. When making an eye in wire rope with the Nicopress, you are primarily saving what resource?

1. cost
2. Time
3. Labor
4. Material

4-63. A basket socket, fabricated by the dry method, has one sixth of the strength of a poured zinc connection.

1. True
2. False

4-64. Molten lead is used vice zinc for a basket socket. This socket has approximately what fraction of the strength of a zinc connection?

1. One fourth
2. One half
3. Three fourths
4. Seven eighths

4-60. To make a temporary eye splice with a 1 1/2-inch rope, you need a total of how many wire rope clips?

1. Five
2. Six
3. Three
4. Four

4-61. You have to change the fitting on the end of a wire rope several times during a job and the fitting must bear a heavy load without slipping or failing. What type of fitting meets your needs best?

1. A poured socket
2. A wedge socket
3. A wrapped and mule-tailed socket
4. A spliced fitting